

Learning drug-perturbed data

Goal: deep learn drug responses and predict new drug indications (drug repositioning)

Data overview

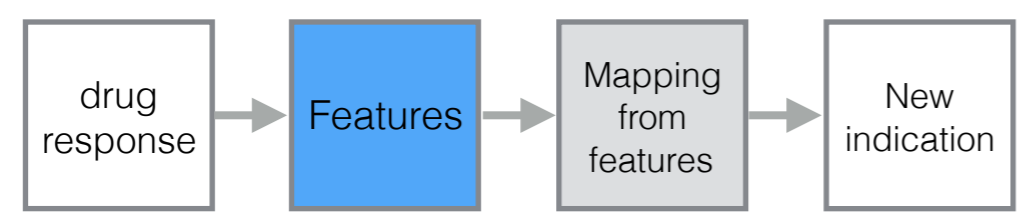


6 Datasets 24600 Small Molecules 53 Cells 978 Genes

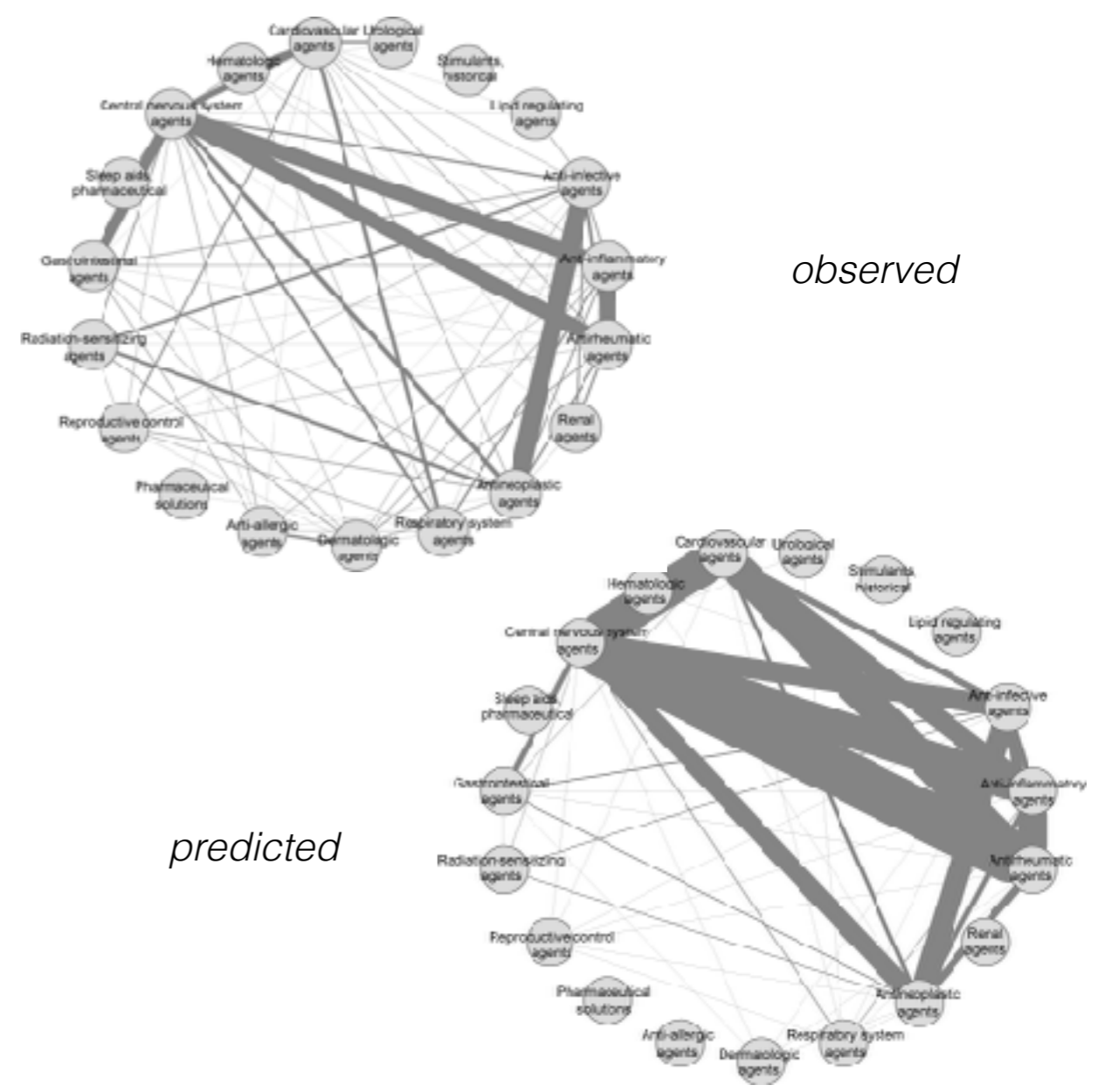
1240 compounds
(19 therapeutic use)

...

978 landmark gene expression levels
measured in 1,328,098 examples



Ongoing result



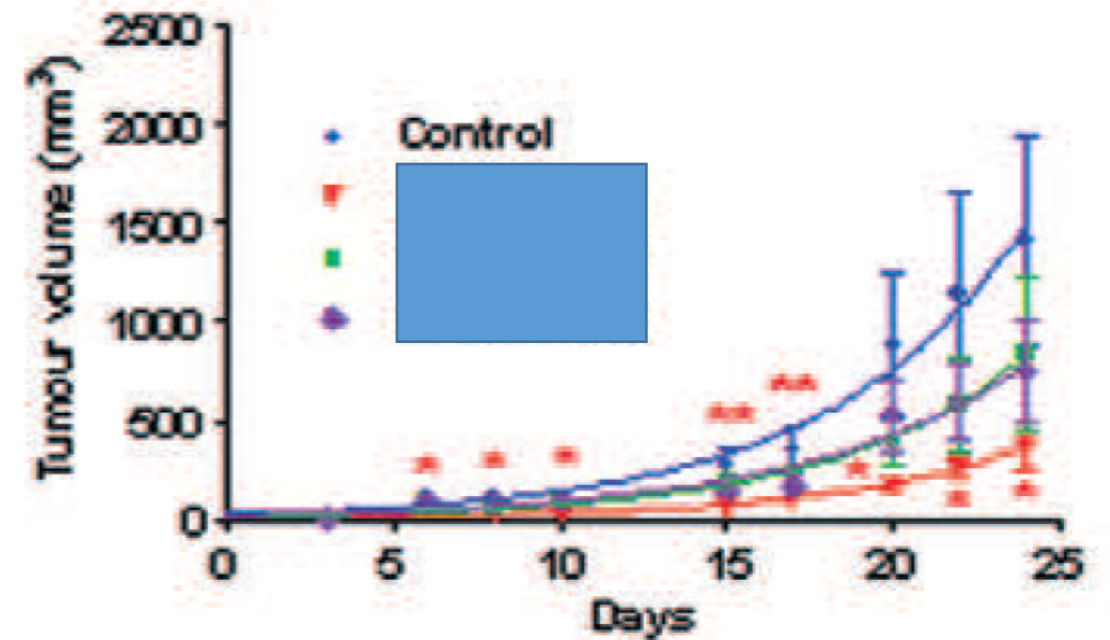
For Drugs X and Y

Indication : Asthma, COPD treatment

StandigmAI says

“ It may work as antineoplastic drug.”

Proven in in-vivo experiments!



British Journal of Pharmacology (2012) 166 721–736

[Br J Pharmacol. 2012 May;166\(2\):721-36. doi: 10.1111/j.1476-5381.2011.01791.x.](#)

Involvement of α 2- and β 2-adrenoceptors on breast cancer cell proliferation and tumour growth regulation.

[Pérez Piñero C¹](#), [Bruzzone A](#), [Sarappa MG](#), [Castillo LF](#), [Lüthy IA](#).

For Drug Z

Indication : CML (Chronic myelogenous leukemia)

StandigmAI says

“ It may improve pulmonary function.”

Proven in in-vivo experiments!

[PLoS One](#). 2016 Jan 20;11(1):e0147005. doi: 10.1371/journal.pone.0147005. eCollection 2016.

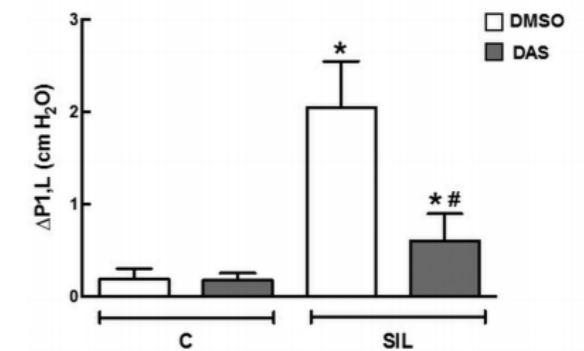
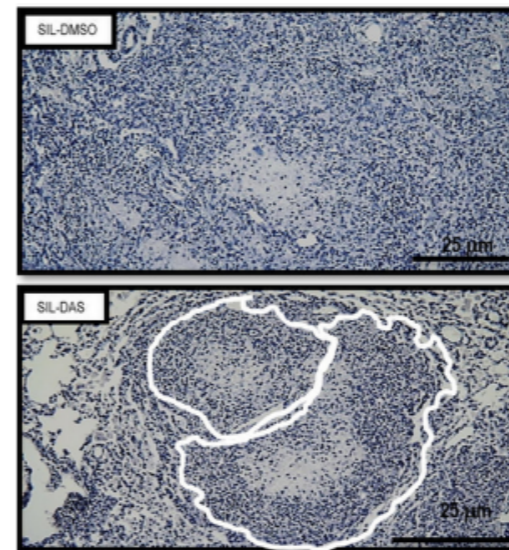
Dasatinib Reduces Lung Inflammation and Fibrosis in Acute Experimental Silicosis.

[Cruz FF](#)¹, [Horta LF](#)¹, [Maia Lde A](#)¹, [Lopes-Pacheco M](#)^{1,2}, [da Silva AB](#)^{1,2}, [Morales MM](#)², [Gonçalves-de-Albuquerque CF](#)³, [Takiya CM](#)⁴, [de Castro-Faria-Neto HC](#)³, [Rocco PR](#)¹.

[Growth Factors](#). 2015;33(5-6):366-75. doi: 10.3109/08977194.2015.1109511. Epub 2015 Nov 25.

Dasatinib attenuated bleomycin-induced pulmonary fibrosis in mice.

[Yilmaz O](#)¹, [Oztay F](#)¹, [Kayalar O](#)¹.



PLoS One. 2016 Jan 20;11(1):e0147005.